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ABSTRACT

Remotely Enabled Pool Table

A system for remotely enabling a pool table, the system comprising a console located near the table, the console including a payment mechanism and a wireless communication mechanism, a pool table able to communicate with the console in a wireless fashion and also including a controllable ball release, wherein upon payment being made at the console, the console communicates with the table, which enables the ball release to release balls for play.

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COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

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ASSOCIATED PROVISIONAL APPLICATION DETAILS

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The following statement is a full description of this invention, including the best method of performing it known to me/us:-

REMOTELY ENABLED POOL TABLE

FIELD OF THE INVENTION

The present invention relates to an apparatus for remotely enabling a pay-per-play pool table.

BACKGROUND OF THE INVENTION

Coin operated pool tables first came into being in the 1950's. At that stage, coin operation was implemented by means of a mechanical push-slot, similar in style to that used today in coin-operated laundries. A problem with this solution, was that the coin mechanism was fairly simple, and thus easily defrauded, for example by using a circular disc of metal approximating the required coin.

In order to overcome this problem, electro-mechanical coin mechanisms were then introduced. These mechanisms, incorporating a micro-switch for coin ingress detection, operated a motor or solenoid for ball release, using batteries and a relay system. Although this system was more "intelligent" than the previous purely mechanical systems, fraud was still possible, although not quite as easily as with the mechanical systems.

In about 1993, electronic coin mechanisms became available in Australia, these being far more difficult to defraud by means of counterfeit or imitation coins. These coin mechanisms however, utilise a significant amount of electrical power for their operation. This is a particular problem in the Australian environment, since the existing pool tables using the old-style coin mechanisms utilise batteries built into the structure of the pool table, such batteries being generally inadequate to power the new electronic coin mechanisms for any extended period of time. Furthermore, the Australian ownership structure in regard to pool tables, being one where a gaming equipment operator owns the pool table rather than the owner of the hotel in which the table is situated, does not readily permit the installation of wiring to provide mains power to the table. This mains-wiring

solution has, however, been adopted in the UK, since hotel chains there tend to own the tables themselves.

In Australia, once the electric power problem became evident, the solution adopted by the industry was to minimise the power consumption by powering down the electronic coin acceptor mechanisms, unless in the process of actually accepting a coin. Thus, upon detecting a coin being inserted, the coin mechanism would power up extremely rapidly, process the coin acceptance, and then power down again. The problems with this approach, it has transpired, is that these mechanisms are very sensitive to voltage levels, which is a particular problem given the battery operated nature of the pool tables.

SUMMARY OF THE INVENTION

It is an object of the present invention to ameliorate one or more disadvantages of the prior art.

According to one aspect of the invention, there is provided a system for remotely enabling a specific one of a plurality of like remotely enabled individually selectable pool tables, said system comprising:

a console located near the plurality of tables, the console including a payment reception means, a table selection means for selecting said specific one of the plurality of tables, and a console wireless communication means; and

said plurality of tables, each including a table wireless communication means and a ball release means; wherein

the console wireless communication means is adapted, when (i) the specific table is selected using the table selection means and (ii) a payment is made to the payment means, to communicate with the table wireless communication means of the specific selected table, to thereby enable the ball release means of said specific selected table to release balls for play.

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According to another aspect of the invention, there is provided a console for remotely enabling a specific one of a plurality of like remotely enabled individually selectable pool tables, the console comprising:

a payment reception means;

a table selection means for selecting said specific one of the plurality of tables; and

a console wireless communication means adapted, when (i) the specific table is selected using the table selection means and (ii) a payment is made to the payment reception means, to communicate with a table wireless communication means of the specific selected table, to thereby enable a ball release means of said specific selected table to release balls for play.

According to another aspect of the invention, there is provided a remotely enabled pool table, being one of a plurality of like remotely enabled individually selectable pool tables, said pool table comprising:

a ball release means; and

a wireless communication means adapted to be selectively communicated with, having regard to respective wireless communication means of the other ones of said plurality of pool tables, to thereby enable the ball release means to release balls for play.

BRIEF DESCRIPTION TO THE DRAWINGS

Embodiments of the invention are described with reference to the drawings, in which:

Fig. 1 is a block diagram of the system in accordance with the preferred embodiment of the invention.

Fig. 2 presents detail of the console customer control function.

Fig. 3 depicts detail of the console service readout function.

Fig. 4 shows a functional flow chart illustrating console control processes.

DETAILED DESCRIPTION

Fig. 1 shows an arrangement whereby multiple pool tables 102, 104, 106 are enabled, thus permitting a customer to play at the tables, the enablement being authorised

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by a remotely located console 100. This console 100 enables the pool tables 102, 104, 106 by means of radio signals 108, 110, 112 respectively.

A customer wishing to play at one of the tables 102, 104, 106 approaches the authorisation console 100, which is located near the aforementioned group of tables. The customer selects one of the group of tables 102, 104, 106 by means of a customer control 126, which in turn communicates the customer's selection by means of a bus 128 to the console controller 124. The console controller 124 indicates the availability of a table, say, 102, by means of a customer read-out 120, the information being imparted by the console controller 124 by means of a bus 122 to the readout 120. The customer, is informed of the availability of the table 102 on the customer readout 120, and is instructed by the readout 120 to make a specified payment into a coin slot 116. The specified payment may be fixed, or alternatively, programmed by the table owner or franchisee to be a function of time of day, day of week etc.

The customer now deposits a number of coins 114 into a coin slot mechanism 116, which in turn communicates the making of this deposit by means of a bus 118 to the console controller 124 which displays receipt of payment on the readout 120. The customer upon verifying that the correct payment has been registered by the console controller 124 by means of the customer readout 120, confirms the transaction using customer control 126, which communicates this confirmation via bus 128 to the console controller 124. The customer then walks over to the selected table 102 to commence play.

Once the console controller 124 detects by means of the bus 128 and the customer control 126 that the customer has confirmed the transaction, the controller 124 communicates via an antenna 130 and a radio link 108 to a table 102, which receives the radio signal 108 by means of an antenna 172. This signal is then communicated via the antenna 172 to a table controller 150, which by means of a bus 156 displays the number of credits available to the customer on a credit readout 158. The number of credits displayed on the readout 158 will of course be dependent on the number of coins 114 which the customer deposited in the coin slot 116 at the authorisation console 100.

The customer now initiates the beginning of the first game using a customer control 146 at the table 102, this initiation being communicated by a bus 148 to the table controller 150. Controller 150 directs a motor 162 using a control line 160 to release the balls onto the table, whereupon play begins. As each ball is pocketed during the game, the ball is directed from the pocket by means of a chute to a central ball collection area. A sensor 164 is arranged to distinguish the fifteenth pocketed ball, which signals the end of the game, and signals detection of this fifteenth ball by means of a bus 166 to the table controller 150. The controller 150 then decrements the amount of credit remaining, and indicates the new credit amount on the credit readout 158 by means of a bus 156. The customer initiates the next game by means of the customer control 146.

Play continues in the aforementioned manner, the amount of credit remaining indicated by the credit readout 158 and the amount being decremented each game, until no credit remains. While credit remains, as indicated by the readout 158, the customer is able to initiate new games by means of the customer control 146.

In regard to the aspect of electrical power, the remote console 100 is powered by means of a power supply 134 through a line 132, which power supply 134 is in turn connected to a mains supply by means of a cable 136. The remote console 100 therefore is, in the present embodiment, powered by mains supply voltage. In contrast, the table 102 is powered by an on-board battery 170, via a line 168. Since all functions not essential for operation of the table 102 such as the coin slot 116 are now located at the remote console 100, the demands upon the table battery 170 are significantly reduced, resulting in a longer battery life, and better system reliability and performance.

Having described the system from the customer perspective, it is noted that the embodiment also makes provision for control functions for the table owner both at the console 100 and at the various tables 102, 104, 106. Thus, the owner may calibrate a system clock, set a base credit unit which represents the money value increment upon which the cost of games is based, change the basic price which is a multiple of the aforementioned base credit unit and so on, using a service control function 142, which is connected to the console controller 124 by means of a bus 144. The owner also has

access to a service readout function 138 which is connected to the console controller 124 by means of a bus 140. Related service functions may be performed at each table 102, 104, 106 by means of the service control function 152 which is connected via a bus 154 to the table controller 150.

The console controller 124 also has a modem capability or alternatively, a data communication capability, based on a communication standard such as RS 232, by which communication may be established to an external network by means of a line 174. This communication function facilitates remote control and/or monitoring of the console 100 and tables 102, 104 and 106. Furthermore, remote diagnostic monitoring of the console 100 and tables 102, 104, 106 is possible, enabling early detection of faults, and rapid dispatch of service personnel to effect repairs. In very large pool table complexes, the communication function allows central control of numerous clusters of tables/consoles, each cluster comprising, say, a console 100 and a number of associated tables 102, 104, 106.

A display board 176 is connected to the console controller 124 by a line 178. The display board 176 displays information of general interest to patrons using the pool tables. Such information includes, for example, announcements on upcoming pool tournaments, participants therein, and other such information relating, perhaps, to the club premises. The information displayed on the display board 176 is communicated to the console controller 124 by means of the communication line 174. The aforementioned information can be stored in the console controller 124, or alternatively, it can be conveyed directly to the display board 176, and stored therein. The display board 176 is implemented, in the present embodiment, using Light Emitting Diodes (LED's).

Fig. 2 presents in more detail the console customer control function 126 described previously in Fig. 1. The customer control function 126 is seen to comprise table selection buttons 200, 202, 204 ... for the tables 102, 104, 106 ..., and also a confirm button 212 by which the customer confirms the transaction after verifying that correct payment has been registered on the console customer readout 120 as described above.

These various customer control elements are connected to the console controller 124 by means of a bus 128.

Fig. 3 depicts detail about the console service readout function 138. This function comprises three electromechanical non resettable meters, one meter 300 indicating total cash taken, one meter 302 indicating total tokens taken, and one meter 304 indicating total games played. These electromechanical meters are cumulative, and non resettable, thus providing a whole-of-life cumulative indication for the console 100 in which they are mounted. Furthermore, the service readout function 138 also includes a printer 306 which is used by the table owner to provide information such as daily takings, games played and so on.

Fig. 4 shows a functional flow chart which illustrates how the table owner may either change operating parameters or exercise control functions at the console 100 by means of service control function 142 and service readout function 138. Step 400 shows that the console controller 124 continuously monitors whether the lockable console front door is unlocked and open. This door protects console equipment, while making available to table customers the customer control function 126, the customer readout 120, and the coin slot mechanism 116. If the console controller 124 detects that the door has been unlocked and opened, it inhibits the service meters in a process step 402, in order to stop the accumulation of cash, tokens, and games information while the console is being serviced. Thereafter, the owner selects either a "change parameter" function or a "control" function by means of a step 414. If a "change parameter" function is chosen, the process is routed to a step 404, whereby the owner selects the particular control functions to be adjusted. Thereafter, a step 406 enables the particular function parameter to be adjusted. Next, a step 408 enables either further changes to be made by routing the process back to the select control function 404, or alternatively, enables the owner to exit the routine by routing the process to a step 410 which ensures that the door is closed and locked prior to enabling the service meters at a step 412. The process reverts to step 400 at this point, whereby the console controller 124 again continuously monitors whether the

door is unlocked and open. A typical change parameter function could, for example, be to change the price per game on a time of day basis.

If the owner wishes to exercise a "control" function, and wants, for example, to obtain a daily readout of cash takings etc., the process inhibits service meters at step 402 after door unlocking and opening is detected at step 400, however this time the operator selects the "control" option at step 414, whereafter the process is routed to a select control function 416. At this point, for example, the operator might select a "Print Daily Cash Takings" function. Thereafter, the operator activates the function at a step 418, resulting, in this case, in a printout from printer 306 (Ref: Fig. 3). Further control options can be selected at a step 420, which then routes the process back to step 416 which enables selection of further control functions. Alternatively the owner may exit the routine, whereby the process is routed to the step 410 which again requires that the door be closed and locked before enabling service meters at the step 412 prior to returning to the door monitoring step 400.

The foregoing describes only a particular embodiment of the present invention, and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

For example, the aforementioned description details use of radio communication from the console controller 124 via the antenna 130 and the radio link 108 to the table 102 where the communication is received by means of the antenna 172, and routed through to the table controller 150. Instead of radio communication, use could easily be made, for example, of infrared communications instead.

Furthermore, although the aforementioned description is based upon payment by means of coins 114 inserted into the coin slot 116, payment could equally be made by means of credit cards or smart cards being inserted into or swiped through an appropriate card reader.

CLAIMS

The claims defining the invention are as follows:

1. A system for remotely enabling a specific one of a plurality of like remotely enabled individually selectable pool tables, said system comprising:

a console located near the plurality of tables, the console including a payment reception means, a table selection means for selecting said specific one of the plurality of tables, and a console wireless communication means; and

said plurality of tables, each including a table wireless communication means and a ball release means; wherein

the console wireless communication means is adapted, when (i) the specific table is selected using the table selection means and (ii) a payment is made to the payment means, to communicate with the table wireless communication means of the specific selected table, to thereby enable the ball release means of said specific selected table to release balls for play.

2. A system according to claim 1, wherein the wireless communications uses a radio transmission medium.

3. A system according to claim 1, wherein the wireless communications uses an optical transmission medium.

4. A system according to claim 1, wherein the payment is one of a programmable fixed payment, a payment programmed as a function of a time of day, and a payment programmed as a function of a day of week.

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5. A system according to claim 1, wherein the payment results in a number of credits being allocated, said number of credits being decremented at the completion of a game.

6. A system according to claim 1, wherein equipment in the console is powered by mains power, and equipment in the table is powered by battery.

7. A system according to claim 1, wherein console control parameters and table control parameters are controlled remotely by means of an external console communication connection.

8. A system according to claim 1, wherein console monitoring parameters and table monitoring parameters are monitored remotely by means of an external console communication connection.

9. A system according to claim 1, wherein the console further includes one or more electromechanical non-resettable meters.

10. A system according to claim 1, further comprising a programmable announcement board responsive to a signal from the console.

11. A system according to claim 10, wherein the console signal is dependent upon a signal received by the console using an external communication link.

12. A system according to claim 1, wherein payment is made using one or more coins.

13. A system according to claim 1, wherein payment is made using a credit card or a smart card.

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14. A console for remotely enabling a specific one of a plurality of like remotely enabled individually selectable pool tables, the console comprising:

a payment reception means;

a table selection means for selecting said specific one of the plurality of tables; and

a console wireless communication means adapted, when (i) the specific table is selected using the table selection means and (ii) a payment is made to the payment reception means, to communicate with a table wireless communication means of the specific selected table, to thereby enable a ball release means of said specific selected table to release balls for play.

15. A remotely enabled pool table, being one of a plurality of like remotely enabled individually selectable pool tables, said pool table comprising:

a ball release means; and

a wireless communication means adapted to be selectively communicated with, having regard to respective wireless communication means of the other ones of said plurality of pool tables, to thereby enable the ball release means to release balls for play.

16. A system substantially as described herein with reference to any one of the embodiments, as that embodiments is shown in the accompanying drawings.

17. A console substantially as described herein with reference to any one of the embodiments, as that embodiments is shown in the accompanying drawings.

18. A pool table substantially as described herein with reference to any one of the embodiments, as that embodiments is shown in the accompanying drawings.

DATED this twenty-first Day of March, 2002

A. HANKIN & CO. PTY. LIMITED

Patent Attorneys for the Applicant

SPRUSON&FERGUSON

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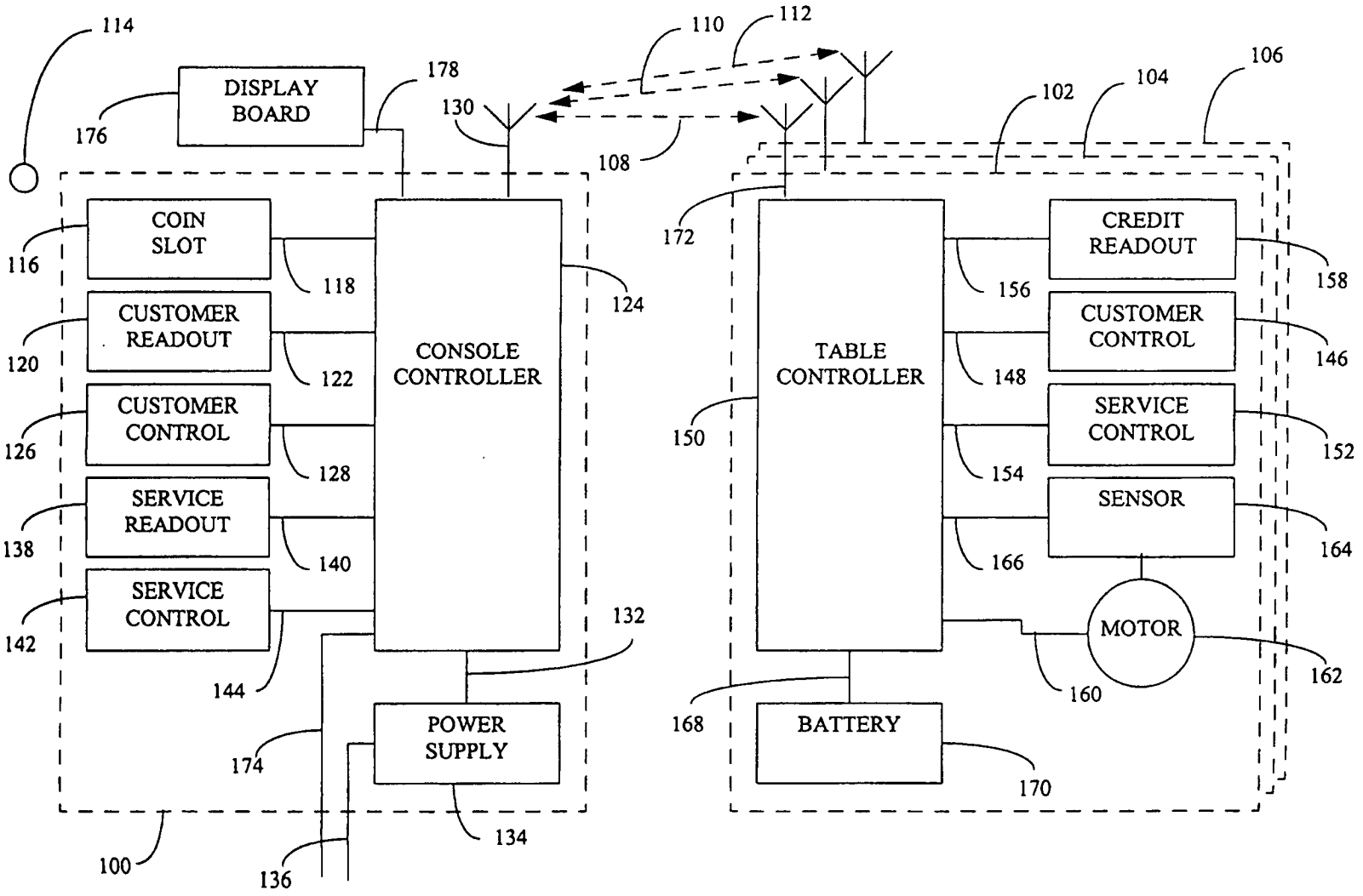
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DISPLAY BOARD
176
178
110
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130
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102
104
106
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COIN SLOT
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CUSTOMER READOUT
120
122
CUSTOMER CONTROL
126
128
SERVICE READOUT
138
140
SERVICE CONTROL
142
144
CONSOLE CONTROLLER
124
132
POWER SUPPLY
174
134
136
100
TABLE CONTROLLER
150
168
BATTERY
170
CREDIT READOUT
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CUSTOMER CONTROL
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SERVICE CONTROL
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152
SENSOR
166
164
MOTOR
160
162

Fig. 1

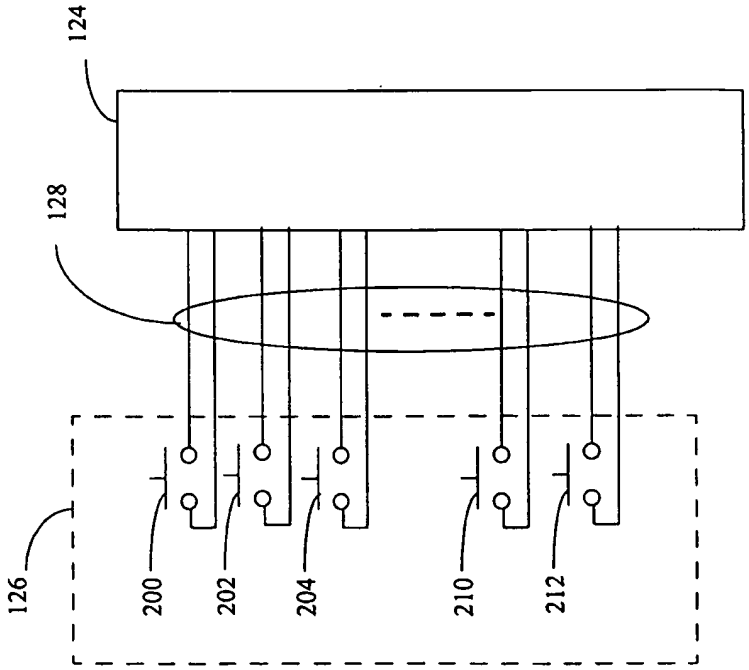


Fig. 2

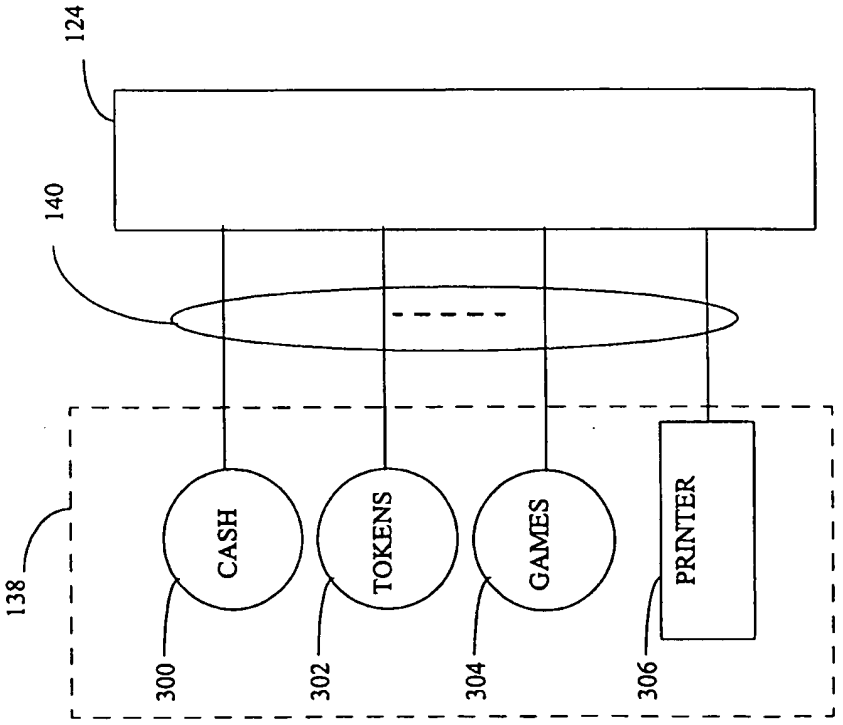
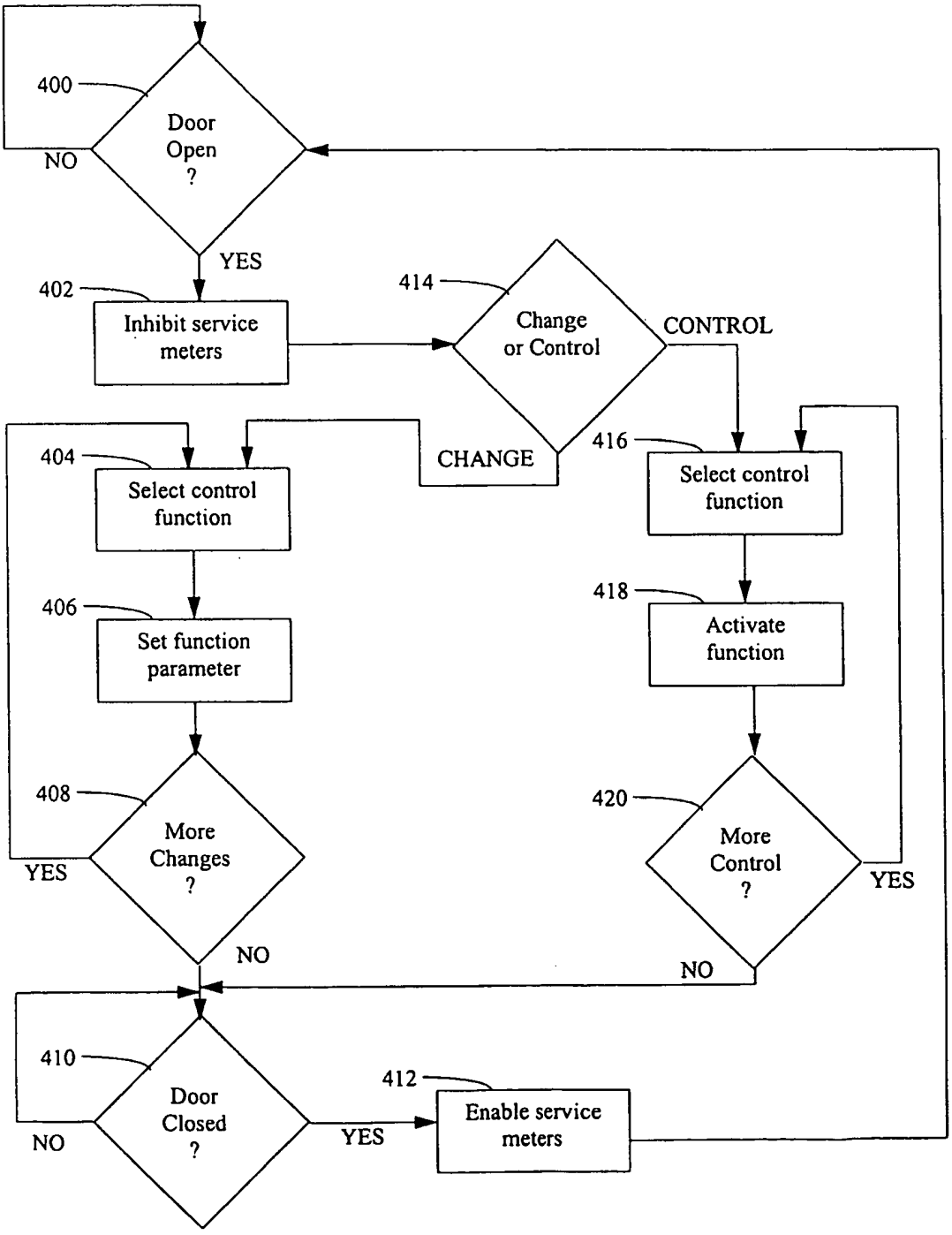


Fig. 3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NO
YES
402
Inhibit service meters
414
Change or Control
CONTROL
CHANGE
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Select control function
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Set function parameter
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More Changes ?
YES
NO
416
Select control function
418
Activate function
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More Control ?
YES
NO
410
Door Closed ?
NO
YES
412
Enable service meters

Fig. 4